

552,021

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
14 October 2004 (14.10.2004)

PCT

(10) International Publication Number
WO 2004/087573 A1

(51) International Patent Classification⁷: **C01B 39/02, 39/46**

(21) International Application Number: **PCT/AU2004/000428**

(22) International Filing Date: **2 April 2004 (02.04.2004)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(30) Priority Data: **2003901594 4 April 2003 (04.04.2003) AU**

(71) Applicant (for all designated States except US): **NANOCHEM HOLDINGS PTY LTD [AU/AU]; Level 6 Gehrmann Laboratories, Research Road, University of Queensland, St Lucia, QLD 4070 (AU).**

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MACKINNON, Ian [AU/AU]; c/- Level 6 Gehrmann Laboratories, Research Road, University of Queensland, St Lucia, QLD 4000 (AU). MILLAR, Graeme [GB/AU]; c/- Level 6**

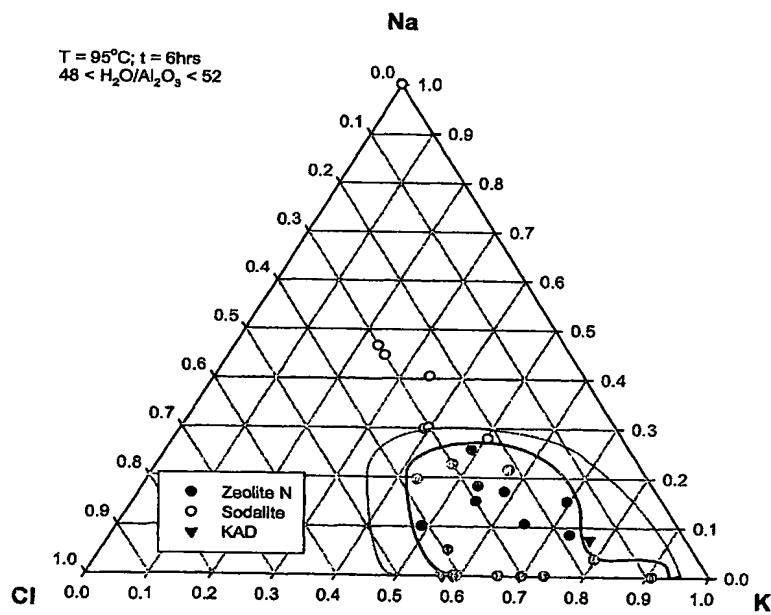
(74) Agent: **FISHER ADAMS KELLY; Level 13 AMP Place, 10 Eagle Street, Brisbane, QLD 4000 (AU).**

(81) Designated States (unless otherwise indicated, for every kind of national protection available): **AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.**

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): **ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,**

[Continued on next page]

(54) Title: ALUMINOSILICATES OF ZEOLITE N STRUCTURE



(57) Abstract: A process for making aluminosilicates of zeolite N structure comprising the steps of: (i) combining a water soluble monovalent cation, a solution of hydroxyl anions and an aluminosilicate to form a resultant mixture having a pH greater than 10 and a $\text{H}_2\text{O}/\text{Al}_2\text{O}_3$ ratio in the range 30 to 220; (ii) heating the resultant mixture to a temperature of between 50°C and the boiling point of the mixture for a time between 1 minute and 100 hours until a crystalline product of zeolite N structure is formed as determined by X-ray diffraction or other suitable characteristic; and (iii) separating the zeolite N product as a solid from the mixture.

WO 2004/087573 A1



GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*